



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/780,762	02/09/2001	James R. Connor	P04864US2	6610

27407 7590 02/20/2003

MCKEE, VOORHEES & SEASE, P.L.C.
ATTN: PENNSYLVANIA STATE UNIVERSITY
801 GRAND AVENUE, SUITE 3200
DES MOINES, IA 50309-2721

EXAMINER

CHUNDURU, SURYAPRABHA

ART UNIT	PAPER NUMBER
----------	--------------

1637

DATE MAILED: 02/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/780,762

Applicant(s)

CONNOR ET AL.

Examiner

Suryaprabha Chunduru

Art Unit

1637

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 December 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-17,21,26 and 27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-17,26 and 27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Applicants' response to the earlier office action (Paper No. 10) filed on December 2002 has been entered.

Response to Arguments

2. Applicant's response to the office action (Paper No.10) is fully considered and found persuasive in view of amendment and arguments.
3. With reference to the rejection made in the previous office action under 35 USC 102(b), Applicants' amendment and arguments are fully considered and the rejection is withdrawn herein in view of the amendment (Paper No. 10).
4. With reference to the rejection maintained in the previous office action under 35 U.S.C. 103(a), applicants' arguments and amendment have been fully considered and the rejection is moot in view of the new grounds of rejection.

New Grounds of Rejection necessitated by the Amendment

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 21 is rejected under 35 U.S.C. 102(b) as being anticipated by Rothberg et al. (USPN. 5,972,693).

Rothberg et al teach a kit for amplifying cDNA comprising a DNA ligase, a DNA polymerase, a reverse transcriptase without RNase H activity, an enzyme for degrading mRNA

Art Unit: 1637

from cDNA-mRNA hybrid, and four deoxynucleoside triphosphates and sequence specific primers (see column 26, lines 56-67, column 27, lines 1-45, column 100, lines 17-37). Thus the disclosure of Rothberg et al. meets the limitations in the instant claim.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 3-17, 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hu et al. (USPN. 6,203,984) in view of Li et al. (USPN. 6,3999,334).

Hu et al. teach a method for amplifying cDNA comprising (i) obtaining an mRNA (see column 12, lines 43-50); (ii) reverse transcribing the mRNAs into cDNA with reverse transcriptase to form cDNA-mRNA complex (see column 12, lines 51-67, column 13, lines 1-7, column 1, lines 57-67, column 2, lines 1-2, column 10, lines 29-4); (iii) degrading the mRNA from the cDNA-mRNA complex to form a linear cDNA (see column 13, lines 9-25, column 1,

Art Unit: 1637

lines 67, column 2, line 1, column 10, lines 47-58); (iv) ligating the ends of said linear cDNA to form a circular cDNA (see column 2, lines 1-4, column 13, lines 27-41, column 10, lines 58-67); (v) introducing first and second specific primers to said circular cDNA and amplifying the cDNA using primer extension amplification (see column 2, lines 4-26, column 11, lines 1-28). Further, Hu et al. teach that the method comprises primer extension by PCR (see column 10, lines 13-18); Taq DNA polymerase (see column 10, lines 13-18); harvesting said amplified cDNA into a vector (see column 10, lines 18-28); first and second primers were designed to hybridize to from about at least 12 nucleotides to the mRNA (see column 9, lines 57-67, column 10, line 1); one of the primers comprise at least same 3' end which is towards the 3' end of the said mRNA (see column 9, lines 57-67, column 10, line 1). Although Hu et al. used reverse transcriptase, Hu et al. did not specifically teach a reverse transcriptase without RNase H activity.

Li et al. teach a method for amplifying cDNA wherein Li et al. teach that the method comprises use of reverse transcriptase without RNase H activity (see column 11, lines 17-39).

Therefore, it would have been prima facie obvious to a person of ordinary skill in the art at the time the invention was made, to combine the method of amplifying cDNA as taught by Hu et al. with the reverse transcriptase RNase H⁻ as taught by Li et al. to achieve expected advantage of developing an efficient amplification method because Li et al. suggests that "the invention provides removal of contaminating or background nucleic acid molecules from the normalized library, and such removal or elimination of contaminating nucleic acids might be performed prior to or after normalization" (see column 15, lines 9-26). An ordinary practitioner would have been motivated to combine the teachings of Hu et al. with the method of Li et al. to achieve a sensitive method of the amplifying cDNA by incorporating the reverse transcriptase

Art Unit: 1637

RNase H⁺ because this limitation would improve the elimination or reduce background contamination.


Conclusion

No claims are allowable.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Suryaprabha Chunduru whose telephone number is 703-305-1004. The examiner can normally be reached on 8.30A.M. - 4.30P.M, Mon - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion can be reached on 703-305-1119. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3014 for regular communications and - for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.


Suryaprabha Chunduru
February 12, 2003


**JEFFREY FREDMAN
PRIMARY EXAMINER**